

Exercise 2 - Solution

Q1

$$\pi_{\{stude\}}(\sigma_{(mark>70 \text{ AND } subj=1011)}(MARK))$$

Q2

$$\pi_{\{name,subj\}}(\sigma_{(mark>70)}(STUDENT \bowtie MARK))$$

Q3

$$\pi_{\{fisrtName,lastName\}}(author \bowtie book)$$

Q4

$$\pi_{\{fisrtName,lastName\}}(author) - \pi_{\{fisrtName,lastName\}}(author \bowtie book)$$

Q5

$$\pi_{\{fisrtName,lastName\}}(author \bowtie authorPub)$$

Q6

$$\pi_{\{fisrtName,lastName\}}(author \bowtie (authorPub \bowtie (\sigma_{(month='July')}(book) \bowtie pub)))$$

Q7

$$A \leftarrow \pi_{\{firstName,lastName\}}(author \bowtie book)$$

$$B \leftarrow \pi_{\{firstName,lastName\}}(author \bowtie authorPub)$$

$$C \leftarrow A - B$$

Q8

$$\pi_{\{name\}}((\sigma_{(gender='female')}(Student)) \bowtie Enrolment \bowtie (\sigma_{(job='designer')}(JobRequirement)))$$

Q9

$A \leftarrow \pi_{\{name\}}(Student \bowtie (Enrolment \div \pi_{\{courseID\}}(\sigma_{(job='designer')}(JobRequirement))))$

$B \leftarrow \pi_{\{name\}}(Student \bowtie Enrolment \bowtie (\sigma_{(faculty='law')}(Course)))$

$C \leftarrow A - B$

Q10

$A \leftarrow \pi_{\{courseName\}}(Course \bowtie Enrolment \bowtie (\sigma_{(gender='female')}(Student)))$

$B \leftarrow \pi_{\{courseName\}}(Course \bowtie Enrolment \bowtie (\sigma_{(gender='male')}(Student)))$

$C \leftarrow (A - B) \cup (B - A)$